

## IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

We claim:

1-24. (cancelled)

25. (currently amended) A method for ~~inhibiting an altered growth state of agonizing smoothened activity in a cell having a pte loss of function phenotype, hedgehog gain of function phenotype, or a smoothened gain of function phenotype~~, comprising contacting the cell with a composition including at least one cAMP agonist antagonist.

26. (currently amended) The method of claim 25, wherein at least one cAMP agonist antagonist activates inhibits adenylate cyclase.

27. (currently amended) The method of claim 25, wherein at least one cAMP agonist antagonist is a cAMP analog inhibitor.

28. (currently amended) The method of claim 25, wherein at least one cAMP agonist antagonist is cAMP phosphodiesterase inhibitor agonist.

29. (currently amended) The method of claim 25, wherein the composition ~~inhibits pte loss of function, hedgehog gain of function, or agonizes smoothened gain of function mediated signal transduction activity~~ with an ED<sub>50</sub> of 1 mM or less.

30. (currently amended) The method of claim 25, wherein the composition ~~inhibits pte loss of function, hedgehog gain of function, or agonizes smoothened gain of function mediated signal transduction activity~~ with an ED<sub>50</sub> of 1  $\mu$ M or less.

31. (currently amended) The method of claim 25, wherein the composition ~~inhibits ptc loss-of function, hedgehog gain of function, or agonizes smoothened gain of function mediated signal transduction activity~~ with an ED<sub>50</sub> of 1 nM or less.

32. (original) The method of claim 25, wherein the cell is contacted with the composition *in vitro*.

33. (original) The method of claim 25, wherein the cell is contacted with the composition *in vivo*.

34. (original) The method of claim 25, wherein the composition is administered as part of a therapeutic or cosmetic application.

35. (currently amended) The method of claim 34, wherein the therapeutic or cosmetic application is selected from the group consisting of regulation of neural tissues, bone and cartilage formation and repair, regulation of spermatogenesis, regulation of smooth muscle, regulation of lung, liver and other organs arising from the ~~primitive~~ primitive gut, regulation of hematopoietic function, regulation of skin and or hair growth, etc.

36-38. (cancelled)

39. (previously presented) A method for promoting growth or differentiation of a neuronal cell, comprising treating the cell with a cAMP antagonist.

40. (previously presented) A method for treating or preventing stroke, comprising administering a composition including a cAMP antagonist to a patient.

41. (currently amended) A method for treating or preventing peripheral neuropathy a neurodegenerative disease, comprising administering a composition including a cAMP antagonist to a patient.